

## CLAIMS

1. A method of creating user-experiential media services in an information system including an information content database, in which parameters descriptive of the content of information services are arranged to be stored, and a user profile database, in which parameters descriptive of users of the information services are arranged to be stored, the method:

creating a rulebase including a test user group's reaction impulses to information stimuli presented;

creating databases descriptive of an information content space and a user profile space and including theoretical alternatives for the parameters descriptive of the content and the users of the information services;

creating a database descriptive of a reaction space including theoretical alternatives for parameters descriptive of the reactions of the users of the information services, the database being created as an interaction of the database descriptive of the information content space and the database descriptive of the user profile space, the interaction being specified based on the reaction impulses defined in the rulebase;

creating metadata files for at least one user of the information service and for at least one content of the information service by comparing the actual parameters descriptive of said user and said content of the information service with the theoretical parameters based on said reaction impulses specified in the rulebase;

determining any possible reactions created as a result of the interaction of said user and said content of the information service based on said metadata files and the reaction impulses specified in the rulebase;

selecting the desired reaction among said possible reactions; and

in response to the user starting to browse said information service, modifying the content of said information service for presentation to the user in such a way that the probability of the creation of the desired reaction in the user is optimal.

2. A method as claimed in claim 1, wherein said rulebase is created by

presenting information objects, which belong to the information content space and whose content and presentation are varied, to a statistically significantly large test user group;

collecting data on the reactions of the test user group to said infor-

mation objects; and

storing the reaction impulses of the test user group to the presented information objects in the rulebase by linking together the essential parameters of the user, the information content and the reaction.

3. A method as claimed in claim 2, wherein

said measurement data specifying the reactions of the test user group includes at least some of the following:

- data measured by sensors on a user's heart rate, epidermal sweating, blood pressure and/or facial muscle tension;
- data determined by a camera on the user's eye movements;
- data based on questionnaires, interviews or observation of behaviour.

4. A method as claimed in claim 1, further comprising specifying said possible reactions by

combining the metadata file descriptive of the user and the metadata file descriptive of said information service;

comparing the combined metadata file with the databases descriptive of the user profile space and the information content space based on the reaction impulses included in the rulebase; and

correlating the file created as a result of said comparison to the database descriptive of the reaction space.

5. A method as claimed in claim 4, further comprising

creating a set of desired reactions out of the set of said possible reactions;

creating a file for each desired reaction, including linking data for the interaction between each user and each information service content object as specified by the rulebase; and

in response to the user starting to browse said information service, modifying the content of said information service for presentation to the user based on said file in such a manner that the content of the information service to be presented to the user is derived from the desired reaction.

6. A method as claimed in claim 1, further comprising

collecting data during the use on the reactions of the users of the information services to the information objects presented;

updating the parameters of the information objects included in said user profile database based on the collected data; and

updating the linking relations of the user, information content and reaction included in the rulebase based on the collected data.

7. A method as claimed in claim 6, wherein said data includes at least one of the following:

- information interest data;
- usage history data;
- measurement data specifying the users' vital functions, which further include at least one of the following:
  - data measured by sensors on the user's heart rate, epidermal sweating, blood pressure and/or facial muscle tension;
  - data on the user's eye movement, determined by a camera;
  - data collected by means of questionnaires presented during usage.

8. A method as claimed in claim 6, further comprising  
 creating a file descriptive of the user's reactions based on said data;  
 monitoring the achievement of the desired reaction in the user by comparing said file with the database descriptive of the reaction space, based on the reaction impulses included in the rulebase; and  
 determining the probability of the achievement of the desired reaction based on said comparison.

9. A method as claimed in claim 8, further comprising  
 in response to the probability of the achievement of the desired reaction being lower than a preset limit value and the desired effect does not change;

comparing the file descriptive of the user's reactions with said set of possible reactions, based on the reaction impulses included in the rulebase; and

as a result of said comparison, creating an adaptation file including content parameters of the information object to be presented next to the user, the parameters being specified in such a manner that the probability of the achievement of the desired effect increases.

10. A method as claimed in claim 8, further comprising  
 in response to the probability of the achievement of the desired reaction being lower than a preset limit value and the desired effect changes;

retrieving the file of the desired reaction from the database, the file including linking data for the interaction between each user and each informa-

tion service content object as specified by the rulebase; and

modifying the content of said information service for presentation to the user based on said file in such a manner that the content of the information service to be presented to the user is derived from the desired reaction.

11. A method as claimed in claim 1, further comprising  
coding the information objects included in said information system as XML documents.

12. A method as claimed in claim 11, wherein  
said XML documents including a style sheet, such as an XSL style sheet for the appearance of an XML content document, the style sheet including instructions for converting the data included in an XML content document into an HTML document.

13. A media service information system including  
an information content database, in which parameters descriptive of the content of information services are arranged to be stored;

a user profile database, in which parameters descriptive of the users of information services are arranged to be stored;

a rulebase, in which the reaction impulses of a test user group to information stimuli presented are arranged to be stored;

database descriptive of an information content space and a user profile space and including theoretical alternatives for the parameters descriptive of the content of the information services;

a database descriptive of a reaction space and including theoretical alternatives for parameters descriptive of the reactions of the users of the information services, the database being created as an interaction of the database descriptive of the information content space and the database descriptive of the user profile space, the interaction being specified based on the reaction impulses defined in the rulebase;

in which media service information system metadata files are arranged to be created for at least one user of the information service and for at least one content of the information service by comparing the actual parameters descriptive of said user and said content of the information service with the theoretical parameters based on said reaction impulses specified in the rulebase;

any possible reactions created as a result of the interaction of said user and said content of the information service are arranged to be specified

based on said metadata files and the reaction impulses specified in the rule-base;

the desired reaction is arranged to be selected among said possible reactions; and

in response to the user starting to browse said information service, the content of said information service is arranged to be modified for presentation to the user in such a way that the probability of the creation of the desired reaction in the user is optimal.

14. An information system as claimed in claim 13, wherein said rule-base is arranged to be created by

arranging information objects, which belong to the information content space and whose content and ways of presentation are varied, to be presented to a statistically significantly large test user group;

arranging data to be collected on the reactions of the test user group to said information objects; and

arranging the reaction impulses of the test user group to the presented information objects to be stored in the rulebase by linking together the essential parameters of the user, the information content and the reaction.

15. An information system as claimed in claim 14, wherein

said measurement data specifying the reactions of the test user group includes at least some of the following:

- data measured by sensors on a user's heart rate, epidermal sweating, blood pressure and/or facial muscle tension;
- data determined by a camera on the user's eye movements;
- data based on questionnaires, interviews or observation of behaviour.

16. An information system as claimed in claim 13, wherein said possible reactions are arranged to be specified such that

the metadata file descriptive of the user is arranged to be combined with the metadata file descriptive of said information service;

the combined metadata file is arranged to be compared with the databases descriptive of the user profile space and the information content space based on the reaction impulses specified in the rulebase; and

the file created as a result of said comparison is arranged to be correlated to the database descriptive of the reaction space.

17. An information system as claimed in claim 16, wherein

a set of desired reactions is arranged to be created out of the set of said possible reactions;

a file is arranged to be created for each desired reaction, including linking data for the interaction between each user and each information service content object as specified by the rulebase; and

in response to the user starting to browse said information service, the content of said information service is arranged to be created for presentation to the user based on said file in such a manner that the content of the information service to be presented to the user is arranged to be derived from the desired reaction.

18. An information system as claimed in claim 13, wherein data are arranged to be collected during the use on the reactions of the users of the information services to the information objects presented;

the parameters of the information objects included in said user profile database are arranged to be updated based on the collected data; and

the linking relations of the user, information content and reaction included in the rulebase are arranged to be updated based on the collected data.

19. An information system as claimed in claim 18, wherein said data includes at least one of the following:

- information interest data;
- usage history data;
- measurement data specifying the users' vital functions, which further include at least one of the following:
  - data measured by sensors on the user's heart rate, epidermal sweating, blood pressure and/or facial muscle tension;
  - data on the user's eye movement, determined by a camera;
  - data collected by means of questionnaires presented during usage.

20. An information system as claimed in claim 18, wherein a file descriptive of the user's reactions is arranged to be created based on said data;

the achievement of the desired reaction in the user is arranged to be monitored by comparing said file with the database descriptive of the reaction space, based on the reaction impulses included in the rulebase; and

the probability of the achievement of the desired reaction is ar-

ranged to be determined based on said comparison.

21. An information system as claimed in claim 20, wherein  
in response to the probability of the achievement of the desired reaction being lower than a preset limit value and the desired effect does not change,

the file descriptive of the user's reactions is arranged to be compared with said set of possible reactions, based on the reaction impulses included in the rulebase; and

as a result of said comparison, an adaptation file is arranged to be created including content parameters of the information object to be presented next to the user, the parameters being specified in such a manner that the probability of the achievement of the desired effect increases.

22. An information system as claimed in claim 20, wherein  
in response to the probability of the achievement of the desired reaction being lower than a preset limit value and the desired effect changes,

the file of the desired reaction is arranged to be retrieved from the database, the file including linking data for the interaction between each user and each information service content object as specified by the rulebase; and

the content of said information service is arranged to be modified for presentation to the user based on said file in such a manner that the content of the information service to be presented to the user is derived from the desired reaction.

23. An information system as claimed in claim 13, wherein  
the information objects included in said information system are arranged to be coded as XML documents.

24. An information system as claimed in claim 23, wherein  
said XML documents include a style sheet, such as an XSL style sheet for the appearance of an XML content document, the style sheet including instructions for converting the data included in an XML content document into an HTML document.